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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,358	12/30/2003	Rajeev J. Ram	MIT.10117	7788

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EXAMINER	
KALIVODA, CHRISTOPHER M	
ART UNIT	PAPER NUMBER
2883	

DATE MAILED: 05/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/748,358	RAM ET AL.	
	Examiner	Art Unit	
	Christopher M. Kalivoda	2883	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☒ Claim(s) *2, 4, 8 and 10* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 July 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12/30/03 & 9/3/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claims 2, 4, 8 and 10 are objected to because of the following informalities:

Regarding claim 2, there appears to be a missing word "materials" after the word "ferromagnetic" in line 1.

Regarding claim 8, there appears to be a missing word "materials" after the word "ferromagnetic" in line 1.

Applicant is advised that should claim 3 be found allowable, claim 4 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Applicant is advised that should claim 9 be found allowable, claim 10 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Appropriate correction is required.

Information Disclosure Statement

Please note, the IDS submitted on 09/30/2004 contains a Non-Patent Literature reference (AN) not considered since it was not in the file.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ido et al., U.S. Patent 5,570,439.

Regarding independent claims 1 and 7, Ido et al. teaches a magneto-optical device/method of forming a magneto-optical device comprising a waveguide structure (Fig 3) that includes at least one cladding region (Fig 3, ref sign 13) and core region (Fig 3, ref sign 14) wherein the cladding region and core region comprise semiconductor alloy materials (col 7, lines 13-14 and 18 respectively since InP is a semiconductor), either said at least one cladding region or said core region is doped with ferromagnetic materials (col 7, line 18 since it is doped with iron (Fe)). Please note, the cladding is actually comprised of two parts/regions, InP (ref sign 3) and Fe-doped InP (ref sign 13).

While Ido et al. do not specifically mention "so as to increase the magneto-optical activity of the device" the structure as claimed is present in Ido et al. and the device is

thus capable of having the magneto-optical activity increased (See In re Swinehart, 169 USPQ 226 (CCPA 1971); In re Schreiber, 44 USPQ2d 1429 (Fed. Cir. 1997).

Regarding claims 2 and 8, the ferromagnetic material comprises Fe, Ni, Co or fine particles of Fe (col 7, line 18).

Regarding claims 3, 4, 9 and 10 the cladding region comprises InP (col 7, line 18).

Regarding claims 5 and 11, the core region comprises InGaAsP (col 7, lines 13-14).

Regarding claims 6 and 12, Ido et al., teach the limitations of claims 1 and 7 as described above.

However, the reference is silent with respect to the core comprising InGaAlAs.

It is well known in the art to select known materials based on suitability for its intended use (see MPEP 2144.04; Sinclair & Carroll Co v Interchemical Corp., 325 U.S. 327, 65 USPQ 297 (1945)).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to select InGaAlAs to comprise the core material.

The motivation for selecting InGaAlAs is to provide a material with a higher refractive index than the surrounding cladding in order to guide light.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 5,253,264 to Suzuki et al. (Fig 23 and associated text) describes a waveguide structure with a cladding and core in which the cladding is

doped with a ferromagnetic material (Fe) and contains the limitations recited in the independent claims. Japanese Publication 2000-021671 describes the limitations in the independent claims. U.S. Patent 5,737,474 to Aoki et al. teach that core materials can comprise InGaAlAs or InGaAsP. Japanese Publication 2004-070012 may describe the limitations in the independent claims since Manganese is a ferromagnetic material. It is noted however, that the publication date is after the filing and priority dates.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M. Kalivoda whose telephone number is (571) 272-2476. The examiner can normally be reached on Monday - Friday (8:30 - 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cmk
04/29/05

Frank G. Font
Supervisory Patent Examiner
Technology Center 2800